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THE MIDWESTERN TAXONOMIC METHOD AS AN AID TO ARCHAEOLOGICAL CULTURE STUDY³⁴⁶

W. C. MCKERN³⁴⁷

IN DELAYED response to a certain demand for a published statement covering the archaeological taxonomic method introduced in the northern Mississippi Valley area a few years ago and now tentatively employed in this, the northern Plains, and the Northeastern areas, it seems advisable to briefly set forth in this journal the essential framework for this method, and to include a revision of previously outlined but unpublished discussions relating thereto, in addition to a brief definition of certain problems involved in its application.

Although the present writer's name has been repeatedly associated with this method, it should be made clear that no single individual can be accurately held responsible for the final product. The relatively undeveloped original plan was revised by a self-appointed committee consisting of interested anthropologists representing the universities of Michigan, Chicago, and Illinois, and the Milwaukee Public Museum.³⁴⁸ A description of the taxonomic method tentatively endorsed by this group was prepared in mimeographed form and distributed³⁴⁹ for critical inspection to archaeological research students throughout the country. As the result of the constructively critical response to this action, certain details relating to terminology were altered. The general reaction to this revision was one of tentative acceptance, and it was considered the proper procedure to submit the method to trial by use.

At the Indianapolis Conference³⁵⁰ a change in the terminology for the classificatory divisions was adopted, creating a new division (base) at the generalized end of the frame (as was originally proposed but discarded), and substituting the term "pattern" for "basic-culture." The method as presented here follows the Indianapolis revision.

³⁴⁶ A revision of the paper: *Certain Culture Classification Problems in Middle Western Archaeology*, presented at the annual meeting of the American Anthropological Association, Central Section, at Indianapolis, 1934.

³⁴⁷ Curator of Anthropology, Milwaukee Public Museum, Milwaukee, Wisconsin.

³⁴⁸ S. A. Barrett, Fay-Cooper Cole, Thorne Deuel, James B. Griffin, Carl E. Guthe, A. R. Kelly, and W. C. McKern, meeting at the University of Chicago, December 10, 1932.

³⁴⁹ Through the facilities of the National Research Council, Committee on State Archaeological Surveys.

³⁵⁰ Under the auspices of the National Research Council, Committee on State Archaeological Surveys, December 6-8, 1935.

THE NEED FOR CLASSIFICATION

Any adequate discussion of this or any other method relating to archaeological culture classification must logically follow some consideration of the need for culture classification in archaeology. It may be advanced that we already possess an adequate taxonomic method. I have received such questions as this: why refer to the cultural manifestation of the pre-literate Iowa as the upper Mississippi, or by any name other than Iowa? In instances we may have sufficient data to verify identification with some known historic group, such as the Iowa. However, in most instances, we can not immediately bridge the barrier between pre-literate and historic or protohistoric cultural groups, and in many instances we can not reasonably hope ever to be able to do so. Yet we perceive that there are archaeologically collected data that warrant cultural segregation. The only taxonomic basis for dealing with all cultural manifestations, regardless of occasional direct historical tie-ups, is that of culture type as illustrated by trait-indicative materials and features encountered at former habitation sites. If at any time it becomes possible to name the historic ethnic group for which the pre-literate group is the progenitor, no confusion should result from the statement that, for example, Upper Mississippi Oneota is Chiwere Sioux; no more so than from the statement that *Elephas primigenius* is the mammoth.

Aside from the inadequacy of the direct-historical method to supply the archaeologist in every instance, and immediately, with means for attachment to the ethnological classification, the latter, even if applicable, would not ideally answer the needs of the archaeologist. One ethnological classification divides the aborigines into linguistic stocks, which are subdivided first into more specific linguistic groups and, finally, into socio-political groups. The criteria for classification are social, primarily linguistic. The major portion of the data available to the archaeologist relates to material culture, and in no instance includes linguistic data. Consequently, this ethnological classification does not satisfy archaeological requirements.

It may be said that we have the ethnologically conceived culture areas to supply a basis for archaeological classification. However, these so-called culture areas involve two factors which the archaeologist must disregard in devising his culture classification if he is to avoid hopeless confusion; these are the spatial and temporal factors. First, the culture area attempts to define, or at least limit, geographic distribution. Unfortunately, cultural divisions of American aborigines did

not always succeed in confining themselves within a continuous area, or in keeping culturally pure an area of any important size. Second, the archaeologist considers the American Indians from the standpoint of all time, and, certainly, there can be no cultural areas devised to account for an unlimited temporal factor.

In brief, the archaeologist requires a classification based upon the cultural factor alone; temporal and distributional treatments will follow as accumulating data shall warrant. Moreover, the archaeological classification necessarily must be based upon criteria available to the archaeologist.

Any statement that the archaeologist has no need for a culture taxonomic method is in conflict with facts which all students of the subject must have encountered. One has only to consult the pre-classification reports on research in almost any American province (outside the Southwest, where a special classification has been developed), noting the indefinite use of the word "culture" to denote anything from the manifestation of a general pattern influential over an area a thousand or more miles in extent, to the highly specialized manifestation of a culture apparent at a cluster of closely localized sites, and noting the confusion of unstandardized cultural terminology, to appreciate the need for simplifying the complexity of cultural data and concepts through the establishment of systematic order. In men's affairs, chaos does not reduce itself to order without a plan. The accomplishments of science stand as a monument to planned orderliness.

Unlike the student of ethnology, the American archaeologist has not been appreciably influenced by the initial complexity of his subject to specialize in some certain aspect of that subject; more inclined to embrace in his studies all apparent aspects of his subject within the area available to him for investigation. As his problems lead towards comparative studies over wider area, his conceptions of cultural manifestations take on broader interpretations. Starting with cultural differentiation, he begins to observe evidence of cultural affinities, not only as regards specific complexes but involving distinctive types of complexes. He lacks a specific terminology that is standard with his fellow students, by means of which he can clearly express his maturing concepts. He stretches old meanings to apply to his needs, and finds himself justly criticised, primarily by students limited to ethnological experience, for his extraordinarily indefinite, inaccurate use of the term "culture," which, for want of a more specific term, is made to serve a multitude of specific purposes for which it never was intended.

The point of all this is that the student of archaeology in the greater Mississippi Valley is greatly in need of a standardized culture scheme such as can be realized only through the medium of a taxonomic method.

There are a few who have hesitated to cooperate fully in this classificatory experiment on the grounds of not being satisfied that the time for classification has yet arrived. They perceive that we lack adequate information to warrant wholesale classification. With due respect for the caution exhibited in this attitude, I can not but feel that this caution is based upon a false conception of the very nature and purpose of classification, and a misunderstanding of the intentions of those endorsing the taxonomic method in question.

Classification is nothing more than the process of recognizing classes, each class identified by a complex of characteristics. For many years, we have all been active in this business of identifying cultural classes, no matter by what name one may call it, but we have not performed with marked efficiency because we have lacked the necessary equipment. In the *Encyclopedia Britannica*, Dr. Abraham Wolf says: "Classification is one method, probably the simplest method, of discovering order in the world. . . . In the history of every science classification is the very first method to be employed." We have tried to get along without it over long. It is classification that makes it possible for one student to describe phenomena in terms readily comprehensible to another student versed in the taxonomic method. It reduces a multiplicity of facts to simplicity and order, and supplies a standardized terminology without which students encounter difficulty in conversing intelligently on a common subject.

The adoption and use of a taxonomic method most certainly does not imply the immediate classification of all manifestations with apparent cultural significance. It is only in those instances in which sufficient data are available, quantitatively and qualitatively, to create a problem of cultural differentiation that classification can serve to any advantage. In some provinces little in the way of detailed classification can logically be attempted at this time; in other provinces much can be accomplished towards detailed classification; and in all provinces a taxonomic method should be adopted before any serious attempts are made at classification. Naturally, this method should be standard for the largest area possible. Following an agreement as to method, the actual classification should be a necessarily slow, deliberate procedure, constantly experimental, subject to such major and minor corrections as newly accumu-

lating data may dictate, subject to a maximum of constructive criticism and resulting improvement. Such is the history of any scientific classification. It is the method of classification to be employed, not any specific classification, that offers an immediate, initial problem for which a solution is now being attempted.

PRELIMINARY TERMINOLOGY

Before describing the taxonomic system, certain details of involved procedure and related terminology should be explained and defined.

The word *determinant* is employed to denote any culture trait when and as used as a marker for any specific culture division. The term is in no sense synonymous with "trait."

In comparing any two culture manifestations, it may develop that certain traits are shared in common by the two manifestations. Such traits, to follow Ritchie,³⁵¹ may be designated as *linked* traits. Traits found to occur in one manifestation and not in that with which it is compared, peculiar to the one manifestation in this comparison, are termed *diagnostic* traits.³⁵² It follows, by definition, that in any comparison of two manifestations only diagnostic traits can serve as determinants for either manifestation, since only traits peculiar to each of the compared culture varieties can be used to differentiate between them. It therefore follows that traits which are diagnostic and thus useful as determinants in one comparison may be linked traits in another comparison and, consequently, useless as determinants. Therefore, there can be no truly valuable fixed list of determinants for any given culture class, serving as such in all possible comparisons; the determinants for a hypothetical Culture A as compared with Culture B may be considerably different from the determinants for the same Culture A as compared with Culture C. The term "determinant" can only be employed as applied in a stated comparison.

In brief, all the traits characteristic for a given culture manifestation comprise the culture complex for that manifestation. However, in any comparison of this manifestation with another, made for purposes of classification, certain traits may be demonstrated as present in both complexes, and these linked traits, serving to show cultural similarity between the two culture variants, can not be employed as determinants in this comparison. Certain other traits, respectively peculiar to each

³⁵¹ Ritchie, Wm. A., *Culture Influence from Ohio in New York Archaeology*. This series, Vol. 2, No. 3, p. 187, January, 1937.

³⁵² *Ibid.*

of the compared complexes and so serving to differentiate between them, are diagnostic traits and useful for culture determinants in this comparison. Other comparisons may produce an entirely new alignment of determinants.

USE OF TRAITS

One of the most difficult problems facing the classifier is that of identifying the determinants for a cultural division, particularly those more specific divisions in which cultural details are important criteria for differentiation. This difficulty is partly due to the difference in complexity between such an object as a simple bone awl and another such as a pottery vessel. Culture criteria available to the archaeologist are demonstrated by culture-indicative materials, for the most part artifacts. A simple type of artifact may serve as one element in a trait complex for one cultural division, and therefore may serve in some comparison as a determinant for that division. This may be the case with a simple type of bone awl. However, when a comparatively complex type of pottery is characteristic for one of the more specific cultural divisions, the question arises as to whether it should be considered as a trait or as comprising a number of trait elements. It certainly is more culturally indicative than a pointed fragment of bone. Single detailed pottery elements, such as shell temper, loop handles, or cord-imprinted decoration, would seem to be at least as important culture markers as a simple implement with a single differentiating trait. Thus, apparently, we may have a considerable variety of trait elements exhibited by pottery alone. Probably other subjects of cultural import in instances will each supply many, rather than a single trait; for instance, mound structure, burial methods, and house types. It may even seem advisable to recognize in the simplest of artifacts such distinct detailed traits as regard shape, material, and technique of fabrication.

The problem, then, narrows down to the selecting, from the traits comprising a complex subject, of those trait details which have sufficient cultural significance to qualify them as culture determinants. This really implies a separate classification of the essential trait elements for any given complex cultural subject. For example, pottery should be classified under such essential heads as paste, temper, texture, hardness, surface, color, shape, and decoration. Determinants in pottery for a cultural division in a specific comparison could then be selected to cover these standard pottery trait elements. In the same way, the essential detailed traits for burial method, and other complex

subjects could be standardized through special classifications, with the result that the determinants for one cultural division would cover the same ground as, and carry similar weight to those for another division with which it is compared. Simpler subjects would offer fewer but equally important trait details, or elements.

Our problem has also to deal with different types of culture, as different from each other as a broad basic type and a local specific type. The former is identified for the most part by traits that are in the nature of fundamental cultural trends. These fundamentals are quite different in character from the detailed material trait elements that are so important in determining highly specialized divisions. Thus, the character of a trait employed as a culture determinant will depend upon the type of cultural division for which it serves as a determinant. The presence of horticulture might serve as a differentiating trait for some sedentary division as distinct from a nomadic, hunting division, but it could not serve to distinguish between two subdivisions of a horticultural class. In the opposite extreme, a peculiar motif in pottery decoration might serve as one determinant of a local specific division, but not as a determinant for the less specialized division under which it is classified, since it is peculiar to the local class.

One general axiom must guide the student in attacking this problem. Traits or trait elements employed as determinants must be characteristic for that division which they serve to identify. That being the case, determinants for a *base* (see following taxonomic system), or even a *pattern*, will be for the most part general in character and relatively few in number. For the more specialized divisions, progressing from lesser to greater specialization, the determinants will be an enriched edition of the determinants for the immediately preceding, more general division, as altered to include greater detail, plus a considerable number of trait elements peculiarly characteristic of the more specialized division. For example, the *focus* determinants would be the *aspect* determinants made richer in detail and augmented by additional traits peculiar to the focus and exhibiting the greatest cultural detail apparent for the entire pattern.

TAXONOMIC SYSTEM

The method here under consideration is basically a simple one employing for its purposes complexes of cultural factors only. Five arbitrary divisions are made differentiating between specialized local types of culture manifestation and more general and broadly influential types.

Focus. Starting at the site, as any investigator must, materials and associated data are collected which have cultural significance. Expressed in terms of culture traits, these data provide a trait complex for the site. If the complex of trait units so determined, or any important complex of trait units included therein, is found to recur in characteristic purity and practical completeness at other sites, to an extent suggestive of cultural identity, this recurring complex establishes the first of our class types, the *focus*. A focus may be briefly defined as that class of culture exhibiting characteristic peculiarities in the finest analysis of cultural detail, and may in instances correspond closely to the local tribe in ethnology. It is dangerous, however, to define it as such.

The manifestation of any given focus at a specific site is termed a *component* of that focus. This is in no sense an additional type of culture manifestation, one of the five class types; rather, it is the focus as represented at a site, and serves to distinguish between a site, which may bear evidence of several cultural occupations, each foreign to the other, and a single specified manifestation at a site. In many instances several components, each at cultural variance with the other, may be found to occur at a single site.

Aspect. A comparison of established foci may supply evidence that certain foci are, on the one hand, very like each other, especially when certain of the more specific trait units are eliminated from consideration, and on the other hand, as a group, show marked dissimilarity to other compared foci. When this similarity of compared foci involves a preponderating majority of the traits and trait elements, the dissimilarity apparent for the greater part in considering the more detailed elements, these foci may be classified under the same *aspect*, the second class type. All foci in a given aspect share the somewhat less specific aspect trait units, but possess additional peculiarities in fine cultural detail. Thus, the type of decorative pattern on pottery might serve as an aspect determinant, shared by all the foci in that aspect, whereas the actual patterns employed might serve to differentiate one of these foci from another.

Phase. Similarly, like aspects may determine a *phase*, the third class type. As the classifier approaches the more generalized classes, cultural detail becomes less important to his purposes, and the traits that are shared by all aspects within the phase to make up the phase complex take on a more general character. For example, whereas actual decorative patterns on pottery may serve as focus determinants, and

less specific types of pattern decoration as aspect determinants, the trait of mechanical technique for ceramic ornamentation, shared by all its aspects, might be the most detailed trait of pottery decoration applicable to the phase. Or, the phase may be characterized by a general burial procedure, general pottery attributes, and general house-type features; whereas one aspect within the phase is differentiated from the other aspects as the result of a consideration of burials, pottery, and houses in somewhat greater detail. In addition to this qualitative factor, a near majority of traits shared in common by compared aspects determine the phase, and these traits comprise the phase complex. As previously demonstrated, it should be remembered that there is a difference between the phase complex, or any other class complex, and the complex of determinants for the phase as specifically compared with another phase.

Pattern. Several phases may be shown to share a small complex of broadly general traits, in contrast to other compared phases in which these traits do not occur. Such a complex of traits determines that the phases identified thereby bear the relation to each other of belonging to the same *pattern*, the fourth class in the taxonomic frame. The traits used as determinants for the pattern will be such as deal with the cultural reflection of the primary adjustments of peoples to environment, as modified by tradition.

For example, the Mississippi Pattern, as compared with the Woodland Pattern, offers such determinants as (tentative list): characteristic extended inhumation; a pottery ware medium to fine in texture, prevailingly shell-tempered, characterized by incised, trailed or modeled decoration, offering relative variety in shape; basically triangular chipped-stone projectile points; secondary flaking superimportant over primary, to reduce thin flakes to a desired shape and size; ungrooved axes; relative superimportance of bone, antler, and shell as materials for a considerable variety of artifacts; sedentary territorial adjustment.

The Woodland Pattern, as compared with the Mississippi Pattern, offers such determinants as (tentative list): characteristic flexed inhumation and/or secondary interments; a pottery ware characteristically grit-tempered, granular in structure, with intaglio surface ornamentation effected on the soft unfired paste by means of cords and/or other indenting tools, prevailingly sub-conoidal in shape with simple shape variety; stemmed or notched chipped-stone projectile points and cutting implements; primary chipping superimportant over secondary,

to reduce thick flakes to a desired size and shape; grooved axes; semi-sedentary territorial adjustment.

Base. In addition to the diagnostic traits respectively employed as determinants for these two patterns, there are also certain broadly general linked traits shared by both; such as pottery, sedentary tendency, and, possibly, horticulture. On a basis of these similarities, if these patterns are compared, for example, with nomadic hunting patterns, the Mississippi and Woodland patterns may be classified together within the same *base*, the most general of the taxonomic divisions. The base is characterized by a few fundamentals, such as relate in the most general way to the food quest (horticulture, hunting, seed gathering), community order (camps, permanent villages), or possession of classes of products of outstanding cultural import (pottery, basketry). Hypothetical examples of the base might include such descriptively named divisions as: Horticultural-Pottery Base; Nomadic-Hunting Base; Sedentary-Fishing Base; Seed-Gathering-Basketry Base.

To summarize briefly, the taxonomic frame consists of five major divisions: focus, aspect, phase, pattern, and base, progressing from localized detailed to large general classes. The manifestation of a focus at any site is called a component of that focus. The method is comparable to a filing cabinet equipped with labeled drawers to facilitate the orderly arrangement of culture-indicative data.

RELATED PROBLEMS

Archaeological data at best offer a very incomplete cultural picture of the people under investigation, and great care should be taken to base classification upon as representative a mass of data as possible. The exploration of a burial site has been demonstrated in many instances to produce information more characteristic of the burial customs of an ethnic group than of the complete culture. Similarly, data collected at a village site with no burials is deficient in that information on burial methods is lacking.

The error in classifying cultural divisions on a basis of site or component units, regardless of the limitations in character of such manifestations, i.e., whether burial, village, or other varieties of sites, may be corrected by a consideration of *communities* rather than components. This method of approach has been advanced by Cole and Deuel,³⁵³

³⁵³ Cole, Fay-Cooper, and Deuel, Thorne, *Rediscovering Illinois*. University of Chicago Publications in Anthropology, pp. 34, 278, University of Chicago Press, 1937.

who define the community as "... the complete cultural manifestation of a local group or as much of it as is determined by archaeological exploration." Any classification based, for example, on data collected exclusively at burial sites is subject to greater error, and is therefore less useful than if the determinants represent a community as manifested at both habitation and burial sites.

Experience seems to demonstrate that absolute mathematical percentages in trait similarity can not be successfully employed to establish the class relationship between two compared manifestations. This is largely due to the fact that a completed list of culture-indicative data for any culture group can never be made available, and that such lists as are available will be more inclusive for one community than for another with which it is compared. Moreover, the different character of the culture elements employed for determining separate classes, i.e., the generalized traits of a pattern as contrasted to the detailed trait units of a focus, serves to complicate any mathematical treatment of the problem; it is difficult to add apples and bushels of apples.

However, the quantitative similarity in culture indicators is decidedly serviceable in determining the classificatory place of a manifestation. After trait units for a community have been formulated as the result of field and laboratory research, and this trait list is compared with similarly prepared lists for other manifestations, it may be found that, culturally, the community complex is more similar to certain of the compared manifestations than to others. If the similarity should amount to a practical identity of these detailed trait elements, a focus would be indicated. If the similarity should amount to an important majority of the trait elements, at least aspect relationship would be indicated. Similarly, a comparison on a basis of more generalized traits in all probability would serve to identify pattern, possibly phase relationships.

It is not to be expected that a complete classification for any given work province can be made immediately. Classification will grow slowly under the most favorable conditions, and, in instances, will be delayed indefinitely. In all instances, the taxonomic method should be regarded as a tool to be used only when needed.

The growth of a classification will not invariably be in logical sequence, from focus to base. After a focus has been determined, the classifier may fail for a time to find evidence of near cultural relationship and, lacking criteria indicating the proper aspect, or even phase, may assign the focus to a pattern before data indicative of the inter-

vening classes are made available; providing, of course, that the pattern complex has previously been defined.

The relative grouping of cultural divisions by any such taxonomic method does not necessarily imply evolutionary relationship. A common historical origin may be suggested, but the implication should be considered as an indicator, guiding further research, rather than as proof in itself. Cultural evolution can not be established by such a classification since time criteria, so essential to any study of directional growth, have no place in its determination; the method makes use of culture criteria only. A chronology independently constructed from available time criteria may later be determined as a parallel development and correlated with a culture classification to establish or refute evolutionary sequence.

Cultural distribution can only be portrayed on a basis of time, since distribution is not a fixed quantity for all time. Thus, any map devised to show the known distribution for a given culture division, such as the Upper Mississippi Phase, is a map of culture only; for any given time, it might offer a materially altered appearance.

In applying any taxonomic method, there is always the danger that an unleashed enthusiasm may induce the classifier to attempt to make the facts fit the method. The lure of being methodical at all costs is a constant threat to the wholly profitable use of any method. It is well to bear constantly in mind the rule that the classification is, and forever must be, subservient to the facts. It is convenience and orderliness in handling archaeological data that is required of the classification, not a flawless, natural regimentation of the facts required by the classification.

This method of classification is arbitrary, like all other scientific taxonomic methods. Under the blending influences of diffusion, and the divergent tendencies involving cultural growth by invention, there can be no hard and fast natural division lines. This absence of sharp lines of demarcation between classes applies rather equally to the subject matter of all natural sciences, and can not be advanced as a valid argument against classification. Our method is not nearly so arbitrary as the division of a continent into culture areas, which disregards an inelastic temporal factor and a confusingly mixed and unstable distributional factor. The maximum degree of arbitrariness in our method is attained in the division of cultural manifestations into five, rather than some other number of culture types. The five divisions were finally agreed upon by the authors of this method as satisfying all apparent

needs for major subdivision. With the means provided for ultimate subclassification into specific groups under these culture-type heads, if and when needed, the major requirements of remotely separate fields seem to be satisfied, as reported by specialists in those fields.

Although the space available here has not permitted for the taxonomic method adequate illustrations by example, it is hoped that the basic idea has been stated clearly, and that some of the most essential problems relating thereto have been defined. Admittedly, the value of such a method, and the ways for making it function to best advantage as discussed herein, are controversial subjects. However, in consideration of experience obtained as the result of a rather widespread trial of the method, during the last six years, it appears to have contributed materially towards introducing order into the previously existing chaotic status of general culture concepts throughout the greater Mississippi Valley.